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TO: Commissioner for Patents
Attn: Examiner Jason M. Greene
Patent Examining Corps
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Washington, D.C. 20231

FROM: Mark DiPietro

OUR REF: 758.1226US01

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Title of Document Transmitted: AMENDMENT UNDER 37 C.F.R. § 1.116;
DECLARATION OF BRAD KAHLBAUGH; and
PETITION FOR EXTENSION OF TIME

Applicant: BENSON et al.
Serial No.: 09/871,156
Filed: 05/31/2001
Group Art Unit: 1724
Our Ref. No.: 758.1226US01

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By: Mark DiPietroName: Mark DiPietroReg. No.: 28,707

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Darlene M. Stack

Darlene M. Stack
Signature

June 18, 2003
Date

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**RESPONSE UNDER 37 C.F.R. 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 1724**

S/N 09/871,156

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	BENSON et al.	Examiner:	JASON M. GREENE
Serial No.:	09/871,156	Group Art Unit:	1724
Filed:	05/31/2001	Docket No.:	758.1226US01
Confirmation No.	7441		
Title:	FILTER STRUCTURE WITH TWO OR MORE LAYERS OF FINE FIBER HAVING EXTENDED USEFUL SERVICE LIFE		

DECLARATION OF BRAD KAHLBAUGH

1. I am an inventor in Kahlbaugh et al., U.S. Patent No. 5,672,399. I am experienced in the development of composite materials used in forming filter structures using polymer fiber, media and other construction materials.

2. I have reviewed Teague et al., U.S. Patent No. 5,409,513 and am familiar with my own invention in Kahlbaugh et al, U.S. Patent No. 5,672,399.

3. The Teague et al. reference is a "candle filter" to remove particulate from effluent derived from a nylon fiber spinning operation. In Teague 5,409,513, either a gas or liquid flow streams may carry particulate to candle filters.

The Teague et al. patent discloses the following in Column 5, lines 21 through 60:

- a) a *variety* of media fiber materials
- b) a *range* of media pore sizes, (1 to 50 μ)
- c) a range of media fiber sizes, (0.1 to 20 μ) and
- d) a range of media thickness values (25 to 127 mm)

One with ordinary skill in the art of filtration understands that filter media performance and characteristics are highly dependent upon how media components are arranged and combined. Teague does not teach how to select, combine, or arrange the components of candle filter media. From the Teague description, there is no basis to assert that candle filter media or candle filter media layers in Teague are not conventional.

4. The Kahlbaugh material, called VTF, is a unique material. The VTF described in U.S. Patent No. 5,672,399 uses a different structure, and functions differently, than other filtration media including candle filter media. The concept in the Kahlbaugh reference is that forming sufficient numbers of fine fiber filtration layers separated by coarse fiber non filtration layers (typically a loose non-woven) can provide substantial advantages in filtration performance. The separated fine fiber layers can act as a barrier while avoiding the adverse effects of filter particulate build-up on any single layer. The VTF structure is a thin pleat-able "depth" loading design in which the fine fiber layers act as barriers to the passage of particulate. Particles removed by the fine fiber layers become held within the coarse fiber non-filtration layers that separate the fine fiber filtration layers.

5. The Benson application includes claims to a variation of a thin pleat-able filtration media with extremely thin layers of sub-micron fibers applied to its upstream and downstream surfaces.

- thickness of Benson thin pleat-able filtration media - 0.01 to 3.0 mm
- fiber diameter of Benson sub-micron fiber layer - 0.001 to 0.5 μ
- thickness of Benson sub-micron fiber layer - < 5 μ
- pore size of Benson sub-micron fiber layer - < 3 μ

6. The Teague et al. reference does not disclose any important detail about the nature of the filtration media used in the candle filter of nylon processing equipment. The selection of an appropriate filtration media that would cooperate with nanofiber is an essential component of the invention. The claims recite characteristics of the media important in the selection. Teague et al. are silent regarding this important characteristic and cannot be held to teach the media characteristics that are important.

7. The Examiner should further understand that, using conventional technology available to engineers today, a separate nano-fiber layer could not be made apart from a substrate material. Effective filtration nano-fiber layers are thin, fragile layers having a very low basis weight made from fibers with a very small fiber diameter. Such materials are fragile and cannot be spun independently of a substrate and successfully used in a filtration structure.

8. The factual discussions set forth in this declaration leads me to conclude the following:

A. The layers in these references cannot be combined randomly, or arbitrarily, with any expectation of success.

B. By itself, pore size is insufficient to characterize the filter media of Teague, Kahlbaugh, or Benson.

C. The media used in the Teague et al. reference is a thick non pleat-able depth loading media suitable for use as a candle filter media.

D. Considerable investment of resources is required to make a single material suitable for use as a substrate for electro-spun fibers in filtration applications. Further, the know-how to do this is more than that of one with ordinary skill in the art of filtration.

9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such false statements may jeopardize the validity of the application or any patent issued thereon.

Dated: 6/18/03

Brad E. Kahlbaugh
Brad Kahlbaugh